Using project families to activate students in the lab

Goltermann, Per ; Ottosen, Lisbeth M.; Kirkelund, Gunvor Marie; Jensen, Pernille Erland

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Per Goltermann
Technical University of Denmark, Denmark, pg@byg.dtu.dk

Lisbeth M. Ottosen
Technical University of Denmark, Denmark, lo@byg.dtu.dk

Gunvor Marie Kirkelund
Technical University of Denmark, Denmark, gunki@byg.dtu.dk

Pernille Erland Jensen
Technical University of Denmark, Denmark, pej@byg.dtu.dk

ABSTRACT
Project cooperation with Industry, Authentic Learning, Facilitating student creativity and innovation, Large classes.

Engineering students should be more independent and active, especially in their final thesis project. At the same time expected that the students cooperate with the industry, produce innovative solutions, good reports and presentations. This can often lead to a number of challenges for the students, supervisors and the industry involved in thesis work.

The Department of Civil Engineering at DTU has over the last years introduced a new approach to these project activities through introduction of project families, where a number of student projects have a common, but broad focus, problem or the same industrial partner (Ottosen et al., 2014). The projects are independent and run in parallel and focus on different aspects, approaches or problems, but may share test setups, information or meet the industry at some predefined times.

The experience from over 50 project students is that it has made the students more active, more independent. The students achieved better results (Ottosen et al, 2014). The projects are at the same time less time consuming to supervise, enable a more optimal use of the facilities, allow the students to progress further with their projects. It is the experience that the students work in project-families provides a real impact for the research, development and cooperation with the industry. The organisation of projects leads also to substantial amounts of peer-review, presentations, discussions and even peer-instructions without a major pressure from the supervisors.

It is, however, relevant to discuss how the concept of project families can be improved and how it can be used in regular courses prior to the final thesis work and how the improved quality of the student activities can be used for an improved cooperation with the industry. Some initial experiments have been also carried out in laboratory courses for large classes (100+ students), where the design of a special student lab equipment has facilitated the experimental activities and encouraged informal peer-evaluations.

REFERENCES

(Ottosen et al, 2014) Ottosen, Lisbeth M.; Goltermann, Per and Jensen, Pernille Erland : Organization of BSc and MSc projects in project families. Proceedings of the 10th International CDIO Conference, Barcelona, Spain, 2014.